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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,262	10/17/2000	Eiji Nakamura	55303(904)	3668
21874	7590	10/24/2003	EXAMINER	
EDWARDS & ANGELL, LLP P.O. BOX 9169 BOSTON, MA 02209			ABDULSELAM, ABBAS I	
		ART UNIT	PAPER NUMBER	
		2674	DATE MAILED: 10/24/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/690,262	NAKAMURA, EIJI
Examiner	Art Unit	
Abbas I Abdulselam	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 July 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-21 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (USPN 6445367) in view of Hughes et al. (USPN 5920261) and Yoshida (USPN 5889817).

Regarding claims 1, 9, 20 and 21, Suzuki teaches a control circuit (103) through which an image signal enters from the outside enabling the circuit to coordinate the operation of timing. Specifically, Suzuki teaches that the control circuit (103) generates control signals, Tscan and Tmry, applied to a latch circuit (105), which is used as a memory circuit for storing one line of the image data for a certain period of time only. Consequently, Suzuki teaches a shift register that is used for converting the image data, which enters serially in a time series to a parallel signal every line of the image. Suzuki teaches a pulse width modulating circuit (7111), a correction circuit (7489) and LUT (7108), which stores leakage currents. See col. 13, lines 33-67, Fig 14 and Fig 42. Suzuki also teaches an applied voltage waveform plots which shows the timings with respect to power supply and emission current. See Fig (30A-30B). However, Suzuki does not teach a digital data which is a single signal of serial data including "a time series of data pulses representative of all rise and fall timings of the plurality of kinds of pulse signals and data pulses representative of all time intervals between the rise and falling timings." Hughes on the other hand discloses a technique of Manchester phase encoding (Fig. 2), the use of Manchester

phase encoder circuit (Fig. 3), circuitry used to generate the timing of the Manchester encoder (Fig. 4) whose resulting timing signals are shown in Fig. 5. See col. 2, lines 58-67 and col. 5, lines 1-35. Hughes teaches implementation of RF transmitter including the use of local oscillator (44), a phase encoder circuit (40) to which the digital input (38) is supplied, and outputs a signal through antenna (54). See col. 5, lines 35-65 and Fig. 6.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Suzuki's image forming apparatus to adapt Hughes' Manchester phase encoding techniques. One would have been motivated in view of the suggestion in Hughes that the Manchester phase encoding techniques as shown in Fig. 2 and Fig. 6 equivalently provide the desired "single signal" incorporating the time series of data pulses. The use of Manchester phase encoding helps track displaying objects as taught by Hughes et al.

Suzuki does not teach serial-parallel converter means for reading the signal of serial data from the storage means and producing as parallel data. Yoshida on the other hand teaches a 16-bit shift register (1012) which is provided between a Manchester decoding circuit (1010) and serial /parallel conversion circuit (1011). See col. See Fig. 1.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Suzuki's image forming apparatus to include Yoshida's use of serial/parallel conversion circuit (1011). One would have been motivated in view of the suggestion in Yoshida that the serial/parallel circuit (1011) along with Manchester decoding circuit (1010) as configured in Fig. 1 equivalently provides the desired serial-to-parallel converter means. The use of serial/parallel conversion circuit helps function a communication system including displays as taught by Yoshida.

Regarding claims 2 and 6, Suzuki teaches the serial/parallel converted data, outputted to a latch circuit (105) used as a memory circuit. See col. 13, lines 57-62.

Regarding claim 3, Suzuki teaches a CPU (2106) outputting a control signal to the multiplexer (2103) in order to combine image signals displayed on the panel. See col. 51, lines 40-46.

Regarding claim 4, Suzuki teaches sequential switching with respect to switching elements with in a scanning circuit (4102). Col. 24, lines 61-63 and col. 29, lines 25-27.

Regarding claim 5, Suzuki teaches a shift register (204) as well as pulse-width-modulated signal waveforms. See Fig 19 and Fig 20.

Regarding claims 7, 11 Suzuki teaches elements with matrix wiring configurations. See Fig 4A.

Regarding claim 8, see Suzuki's Fig 45 including (timing A, timing B).

Regarding claim 10, Suzuki teaches a display pattern in which the appropriate pixel be made to emit light. See Fig 5A.

Regarding claim 12, Suzuki teaches a pulse width modulating circuit (206) controlled by timing signal, Tmod, functioning in association with a control circuit (203).

Regarding claim 13, Suzuki teaches a voltage modulating circuit (106) with respect to image data.

Regarding claims 14-15 and 18-19, Hughes teaches the delay calculation or location processor (8) collecting signals and determining the delay for each pulse transmission and pass all redundant information to the central processor. See col. 10, lines 36-45.

Regarding claims 16-17, Yoshida teaches a shift register (1012) being provided between Manchester decoding circuit (1010) and serial parallel conversion circuit (1011). It would have been obvious that the Manchester encoder, by definition encodes data including that of time series in a series format to produce a single signal, and the produced signal in turn is converted into plural signals by S/P.

Conclusion

2. The prior art made of record and not relied upon is considered to applicant's disclosure. The following arts are cited for further reference.

U.S. Pat. No. 5,023,891 to Johnson III

U.S. Pat. No. 6,067,585 to Hoang.

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulselam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is **(703) 306-0377**.



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Abbas Abdulselam

Examiner

Art Unit 2674

October 16, 2003